

Patent Application No. 10/606,137
Amdt. Dated November 30, 2006
Reply to Final Office Action of July 28, 2006

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (Original): A method for reducing the level of asparagine in a food material, comprising adding an asparagine-reducing enzyme to the food material before heating.

Claim 2. (Original): The method of claim 1, wherein said asparagine-reducing enzyme is asparaginase.

Claim 3. (Original): The method of claim 1, wherein the level of asparagine is reduced by at least about 10%.

Claim 4. (Original): The method of claim 1, wherein said asparagine-reducing enzyme is an enzyme capable of hydrolyzing the amide group of free asparagine.

Claim 5. (Original): A method for reducing the level of asparagine in a food material, comprising:

- (1) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;
- (2) optionally mixing the enzyme with the food material;
- (3) allowing a sufficient time for the enzyme to react with the asparagine; and
- (4) optionally deactivating or optionally removing the enzyme.

Claim 6. (Previously Presented): The method of reducing the level of acrylamide in Claim 5 in a food material, comprising reducing the level of asparagine in the food material before heating.

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Claim 7. (Original): The method of claim 6, wherein reducing the level of asparagine in the food product comprises adding an asparagine-reducing enzyme to the food material.

Claim 8. (Original): The method of claim 7, wherein said asparagine-reducing enzyme is asparaginase.

Claim 9. (Original): The method of claim 7, wherein said asparagine-reducing enzyme is an enzyme capable of hydrolyzing the amide group of free asparagine.

Claim 10. (Original): A method for reducing the level of acrylamide in food, comprising:

- (1) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;
- (2) optionally mixing the enzyme with the food material;
- (3) allowing a sufficient time for the enzyme to react with the asparagine;
- (4) optionally deactivating or optionally removing the enzyme; and
- (5) heating the food material to form the finished food product.

Claim 11. (Currently Amended): A food material, wherein the level of asparagine in said food material is reduced by at least about 10% from the level in the food material in a previous condition.

Claim 12. (Original): The food material of claim 11, wherein the level of asparagine in said food material is reduced by at least about 30%.

Claim 13. (Original): The food material of claim 12, wherein the level of asparagine in said food material is reduced by at least about 50%.

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Claim 14. (Original): The food material of claim 13, wherein the level of asparagine in said food material is reduced by at least about 70%.

Claim 15. (Original): The food material of claim 14, wherein the level of asparagine in said food material is reduced by at least about 90%.

Claim 16. (Currently Amended): A food product comprising a food material, wherein the level of asparagine in said food material is reduced by at least about 10% ~~from the level in the food material in a previous condition.~~

Claim 17. (Original): The food product of claim 16, wherein the level of asparagine in said food material is reduced by at least about 30%.

Claim 18. (Original): The food product of claim 17, wherein the level of asparagine in said food material is reduced by at least about 50%.

Claim 19. (Original): The food product of claim 18, wherein the level of asparagine in said food material is reduced by at least about 70%.

Claim 20. (Original): The food product of claim 19, wherein the level of asparagine in said food material is reduced by at least about 90%.

Claim 21. (Original): The food product of claim 16, wherein said food product is selected from the group consisting of potato crisps, potato chips, tortilla chips, and corn chips.

Claims 22 – 41 (Canceled)

Claim 42. (Original): Tortilla chips comprising less than about 75 ppb acrylamide.

Claim 43. (Original): The tortilla chips of claim 42, comprising less than about 50 ppb acrylamide.

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Claim 44. (Original): The tortilla chips of claim 43, comprising less than about 10 ppb acrylamide.

Claim 45. (Canceled)

Claim 46. (Canceled)

Claim 47. (Currently Amended): An article of commerce comprising:

(a) a food product, wherein said food product has a reduced level of asparagine ~~compared to the level in the food product in a previous condition;~~
(b) a container for containing the food product; and
(c) a message associated with the container;
wherein said message associated with the container informs the consumer that the food product contains a reduced level of asparagine.

Claim 48. (Original): The article of claim 47, wherein said message informs the consumer that the food product is low in asparagine.

Claim 49. (Canceled)

Claim 50. (Previously Presented): The article of claim 47, wherein said food product is a food ingredient.

Claim 51 (Previously presented): A method for the reduction of acrylamide in thermally processed foods comprising the steps of:

(a) providing a food material that contains free asparagine;
(b) adding an asparaginase solution to the food material, thereby inactivating asparagine in the asparagine-containing food material;
(c) using said food material as a component in a food mixture; and
(d) heating said food mixture to form a thermally processed food product.

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Claim 52 (Previously presented): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises primarily a carbohydrate.

Claim 53 (Previously presented): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material is selected from the group comprising rice, wheat, corn, potato and oats.

Claim 54 (Previously presented): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises potato.

Claim 55 (Previously presented): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the asparagine-containing food material further comprises at least one other amino acid.

Claim 56 (Previously presented): The method of reducing acrylamide formation in thermally processed foods of Claim 55 wherein the at least one other amino acid is lysine.

Claim 57 (Previously presented): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the inactivating step (b) comprises adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar.

Claim 58 (Previously presented): The method of reducing acrylamide formation in thermally processed foods of Claim 57 wherein the simple sugar comprises glucose.

Claim 59 (Previously presented): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food mixture is heated at step (d) to a temperature of at least about 121°C.

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Claim 60 (Previously presented): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the thermal processing of the food mixture of step (d) occurs at temperatures between about 121°C and about 191°C.

Claim 61 (Previously presented): A food produced by the method of Claim 51.

Claim 62 (Previously presented): The food of Claim 61 wherein said food comprises potato.

Claim 63 (Previously presented): The food of Claim 62 wherein said food comprises potato chips.